trons are not created either out of the tungsten or out of the surrounding gas. It follows that they flow into the tungsten from outside points of the circuit. The experiments therefore furnish a direct experimental proof of the electron theory of conduction in metals.

I wish to express my appreciation of the assistance I have received from Mr. K. K. Smith, instructor in the laboratory, in the preparation of the tubes and in carrying out some of the measurements. Mr. Smith and I are engaged in a more detailed quantitative study of the emission of electrons from tungsten, the results of which we hope shortly to publish. I also wish to thank Dr. W. R. Whitney and Dr. I. Langmuir, of the General Electric Company, both for supplying the specimens of ductile tungsten used and also for giving me the benefit of their invaluable experience.

O. W. RICHARDSON
PALMER PHYSICAL LABORATORY,
PRINCETON, N. J.

MENDELIAN INHERITANCE OF EPIDERMAL CHARACTERS IN THE FRUIT OF CUCUMIS SATIVUS

THE fruits of the White Spine cucumber (*Cucumis sativus*) possess numerous white epidermal spines or trichomes which roughen the skin very markedly; while those of the Richard's Invincible, an English forcing type (var. *Anglica*), possess but few, small, indistinct, early-deciduous and black spines that scarcely roughen the skin. By crossing these varieties, the White Spine having been used as the maternal parent, there was obtained a type of fruit apparently intermediate in size and in number and prominence of the spines, with the exception that all the spines were black like the paternal parent. In the F_2 generation, of the twenty plants grown fifteen bore black spines and five white spines; six possessed smooth skins with indistinct spines like the Richard's Invincible and the remainder skins with various degrees of roughness—a few even surpassing the White Spine in the number of spines. No correlation of color of spines and roughness was noted—smooth-skinned progeny possessing white as well as black spines.

The inheritance of the color of the spines apparently follows the simple Mendelian segregation, although the number of progeny is too small for a very exact interpretation; the small number of smooth-skinned types also indicates this character as a recessive one, especially as the F_1 fruits show no evidence of this character. Practically, these data are of little value unless they indicate that by crossing back one of these smooth-skinned, white-spined fruits with an English variety, it would be possible to obtain a new white-spined variety, differing in appearance but slightly from var. *Anglica;* theoretically, it adds a little more evidence to the support of Mendel's universal law.

RICHARD WELLINGTON
NEW YORK AGRICULTURAL
EXPERIMENT STATION,
GENEVA, N. Y.

POWDERY SCAB OF POTATOES IN THE UNITED STATES

IN a recent number of *Phytopathology* Professor H. T. Güssow, of Canada, Dominion Botanist, reported for the first time in America the occurrence of the well-known European "powdery" or "corky" scab of potatoes.[1] The specimens upon which he based this report were received first from Quebec, where the disease appeared to be well established in some counties. It was also recorded in isolated cases in widely separated regions of Canada, namely, Cape Breton, Nova Scotia, New Brunswick, Ontario and Alberta. These facts led Professor Güssow to suggest that probably the disease occurs in the United States.

In connection with certain studies now being carried on in the writer's laboratory upon the general subject of potato scab, requests for specimens of scabby tubers have been sent to many individuals representing widely separated localities in the state of Maine and also

[1] Güssow, H. T., "Powdery Scab of Potatoes, *Spongospora subterranea* (Wallr.) Johns.," *Phytopathology*, 3: 18–19, 1913.